

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

KEIL & SCHAAFHAUSEN  
Cronstettenstrasse 66  
60322 Frankfurt am Main  
ALLEMAGNE

KEIL & SCHAAFHAUSEN  
PATENTANWÄLTE

13. Sep. 2006

Date of mailing (day/month/year) 08 September 2006 (08.09.2006)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference S 39 P 4 WO	
International application No. PCT/EP2004/014192	International filing date (day/month/year) 13 December 2004 (13.12.2004)
Applicant SHAFT-FORM ENGINEERING GMBH et al	

## 1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Yolaine Cussac
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>S 39 P 4 WO</b>	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. <b>PCT/EP2004/014192</b>	International filing date ( <i>day/month/year</i> ) <b>13 December 2004 (13.12.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>11 December 2003 (11.12.2003)</b>	
International Patent Classification (8th edition unless older edition indicated) <b>See relevant information in Form PCT/ISA/237</b>			
Applicant <b>SHAFT-FORM ENGINEERING GMBH</b>			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 9 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report <b>29 August 2006 (29.08.2006)</b>  Authorized officer  <div style="text-align: right; font-size: 1.2em;"><b>Yolaine Cussac</b></div>
Facsimile No. +41 22 338 82 70	e-mail: pt11@wipo.int

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing **See form PCT/ISA/210**  
(day/month/year)

Applicant's or agent's file reference  
**S 39 P 4 WO**

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No. <b>PCT/EP2004/014192</b>	International filing date (day/month/year) <b>13.12.2004</b>	Priority date (day/month/year) <b>11.12.2003</b>
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International Patent Classification (IPC) or both national classification and IPC  
**B60K17/22, F16D3/223**

Applicant  
**SHAFT-FORM ENGINEERING GMBH**

1. This opinion contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the opinion
<input type="checkbox"/>	Box No. II	Priority
<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/EP2004/014192

**Box No. I**      **Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/014192

Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 9, 11

because:

☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported  
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 9, 11

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐

has not been furnished

☐

does not comply with the standard

the computer readable form

☐

has not been furnished

☐

does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/014192

Box No. IV

Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:

**See supplemental sheet**

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☐ all parts
- ☒ the parts relating to claims Nos. 1-8, 10

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No. <b>PCT/EP2004/014192</b>
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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	2-8, 10	YES
	Claims	1	NO
Inventive step (IS)	Claims	2-8, 10	YES
	Claims	1	NO
Industrial applicability (IA)	Claims	1-8, 10	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
<p>1. The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 is not novel within the meaning of PCT Article 33(2).</p> <p>Document D1 discloses (see figures 1-3, the references between parentheses relate to this document):</p> <p>A drive joint for the rotationally and axially fixed connection, which, however, permits a limited angular movement, between a first and a second part shaft of a drive shaft, such as a longitudinal shaft for motor vehicles, which has an inner hub as joint inner part and an outer hub as joint outer part and torque transmission means which are provided between the former as further joint parts, the joint being configured in such a way that, when a defined axial force in the direction of a part shaft to the other part shaft is exceeded, the joint parts are unlatched from one another.</p> <p>As a consequence, the subject matter of claim 1 is not novel.</p> <p>2. The combination of features which is contained in dependent claim 2 is neither known from the available prior art nor rendered obvious by it.</p>			

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box IV:

1. This authority has determined that the international application contains multiple inventions or groups of inventions which are not linked by a single general inventive concept (PCT Rule 13.1), as follows:

Claims 1-8, 10:

Drive joint for connection between a first and a second part shaft, which drive joint has an inner hub as joint inner part and an outer hub as joint outer part and torque transmission means which are provided between the former as further joint parts, the joint being configured in such a way that, when a defined axial force in the direction of a part shaft to the other part shaft is exceeded, the joint parts are unlatched from one another.

Claim 9:

Drive joint having an inner hub, an outer hub and a ball cage with balls which are guided in running grooves of the hubs.

Claim 11:

Drive joint having a joint inner part and a joint outer part and a ball cage with balls and radially inwardly pointing webs which are dimensioned and shaped in such a way that the ball cage remains geometrically and mechanically intact when the shafts which are connected to the joint parts are pushed into one another.



Supplemental Box

2. The reasons for this are as follows:

The result of a comparison of the three present groups of claims with the closest prior art (document DE-C-19652110) is that the following features make a contribution to the prior art and can therefore be considered as special technical features pursuant to PCT Rule 13.2:

Claims 1-8, 10: The outer hub is configured as a deformation element.

Claim 9: The track bottom of the first and second running grooves for the balls approaches the outer hub axis, starting from the output-side and the drive-side end of the hubs; insertion contours on both sides of the first and second outer running grooves; centring of the cage in the outer hub and centring of the inner hub with respect to the outer hub via the balls.

Claim 11: Radially inwardly configured webs are configured between the ball raceways of the joint outer part, which webs ensure that the ball cage remains intact when the shafts are pushed into one another.

3. However, it is to be noted that the special technical features of none of the abovementioned groups of claims have commonalities with the special technical features of one of the other groups of claims. There are therefore no "same... special technical features", as is required in PCT Rule 13.2 to establish unity.

Supplemental Box

4. Unity of invention could nevertheless exist if a common problem which was previously not known in the prior art were solved with the (different) special technical features. A comparison of the problems which are solved by the individual inventions shows that this is also not the case:

The following can be considered as problems which are solved by the special features of the abovementioned groups of claims:

Claims 1-8, 10: Provision of a simple joint which is inexpensive to manufacture, by configuration of the outer hub as a deformation element.

Claim 9: Special structural configuration of the joint.

Claim 11: Simplified insertion of the cage.

These problems are different from one another or known in the prior art (see above):

There is therefore no unity of invention between the abovementioned groups of claims, pursuant to PCT Rule 13.2, either with regard to the special technical features or with regard to the problems solved.